

Atty. Docket No. 393551

IN THE SPECIFICATION

Please amend the specification beginning at page 10, line 11 through page 12, line 17 to read:

An AEF in accordance with the invention may be produced using a variety of structures and techniques. For example, commonly-owned co-pending international patent application PCT/US00/05665, filed 1 March 2000, discloses a system in which an alternating electric field is generated by flowing a high-frequency AC current through an electrical conductor proximate to ice being melted. This specification generally contemplates generating an AEF by providing a high-frequency AC voltage in a range of from 0.5 to 300 KHz across a first electrode and a second electrode that are electrically insulated from each other. A key feature of an embodiment in accordance with the invention is a strong alternating electric field in the interfacial ice. Therefore, the stronger the potential difference between the electrodes, the stronger the alternating electric field. The term "electrically insulated" and similar terms have their general meaning that there is no electrical shorting of the first electrode and the second electrode. The terms also imply that there is no closed conductor path connecting the first and second electrodes in a closed circuit. Nevertheless, in one basic type of embodiment, the first and second electrodes are exposed to an open space that water or ice typically occupies, thereby causing some limited electrical connection between the first electrode and the second electrode. For example, in embodiments containing interdigitated first and second electrodes located on a solid nonconductive surface without a layer of insulating material, ice located directly on the interdigitated electrodes acts as a semiconductor between the electrodes. In a second basic type of embodiment, the first and second electrodes are "completely insulated" from each other so that there would be no direct electrical connection between them even if the system were completely immersed in water. In such a system, either or both of the first or second electrodes are completely insulated from any open space that can be filled by ice or water and connect the electrodes. An example is an embodiment containing interdigitated first and second electrodes located on a solid nonconductive surface, but with a layer of insulating material in direct contact with and covering all of the electrodes. In preferred embodiments in

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accordance with the invention, the first and second electrodes are completely insulated from each other so that air breakdown across the electrodes does not occur. Electric breakdown of air causes sparks that can damage electrode material. An insulating coating covering an electrode also protects the electrode from physical damage, such as scratching. Although there is preferably no direct conductive path between electrodes, it is understood that in a system and in a method in accordance with the invention, the ~~capacitive energy of the AEF~~ generates conductivity (resistive) AC current that flows in interfacial ice, producing Joule heat.